





FIG. 20a



## Detailed Description Text - DETX (99):

The FixedPoint parameter allows the application of spatial transformations around a point of reference. For example, specifying a FixedPoint allows the user to rotate the object around the FixedPoint instead of rotating around the center of the object. In general, any supported spatial transformation can be defined to operate around FixedPoint. Since the FixedPoint is a parameter to SpatialTransform and is not part of the pasteboard, the IPO adjusts the ControlPoint automatically to ensure that the child object is merged into the parent pasteboard at the correct position. An example of how the ControlPoint is adjusted is described below.

## Detailed Description Text - DETX (100):

For example (see FIGS. 21a-b), the object has a ControlPoint C of (0.5,0.5) and a fixed point of (2.0,0.0) relative to upper left corner P of the child. Suppose the rendering indicates the child is of size 50.times.50. The FixedPoint P is (-100,0) relative to the child. The ControlPoint is initially (25,25) relative to P, and (125,25) relative to the FixedPoint. Rotating the child 45.degree. about the FixedPoint will generate a child with a new size of 71.times.71 (bounding box) with an origin at (71,107) relative to the

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FAX 240/270-1111

Find what: [ ]

Area: [ ]

Direction: [ ]

Match word: [ ]

Look in: [ ]

[ ] All

[ ] Up

[ ] Whole

[ ] Left

[ ] Find

[ ] Sel/Cur

[ ] Down

[ ] Fail

[ ] Right

[ ] Documents

[ ] Match

```

s:
{
  representation = {
    format = "sunras";
    attribute = {
      dpi = 400;
    };
    d = a l a
    = "/image/bird.larger.r
as";
  };
  representation = {
    format = "TIFF";
    attribute = {

```

FIG. 20a

Σ 689620

el 559 4809

548 556

[illegible]

Using a tagged transcription as the input source of glyph labels for the

Processor 140 is also connected for accessing program memory 110 and data memory 114 to obtain data stored therein. Processor 140 of machine 100 operates by accessing program memory 110 to retrieve instructions, which it then executes. Program memory 110 includes the underlying system software and firmware 112 that provide the operating system and operating facilities of machine 100, and template training routine 200 that implements the invention described in the flowchart of FIG. 11 and in the flowcharts that reference those routines, including template construction subroutine 270. Depending on the particular implementation of template training routine 200, program memory

[illegible]





## Brief Summary Text - BSTX (58):

One implementation of this second training technique that uses a tag transcription also represents the formal line image source model and the text line tag transcription as finite state transition networks. The steps in this implementation are similar to the one previously described for the first training technique: merging the two networks, decoding the text line image source of glyph samples, and obtaining labeled glyph image origin positions from the best path through the merged network. This labeled glyph image origin position data is then used as input to the novel template construction process described previously. The finite state network that represents the text line tag transcription models the text line tag transcription as a series of transcription nodes and a sequence of transitions between pairs of the transcription nodes. Each transition has a transcription label associated with it, and one transition has the tag associated with it. A sequence of transitions, called a transcription path, through the tag transcription network indicates the ordered arrangement of the transcription labels in the text line tag transcription. The transcription image network produced from merging the two networks indicates modified mapping data mapping a respective one of the transcription labels included in the tag transcription to a respective glyph sample and to a respectively paired glyph label indicating the character in the glyph sample character set. Transcription labels associated with transitions in the tag transcription network become message strings associated with transitions in the transcription image network, and in particular, the tag associated with the transition in the tag transcription network becomes a message string associated with a transition included in the transcription image network such that the transcription image network models the relationship between the tag and at least one glyph occurring in the text line image of glyph samples.

## Drawing Description Text - DRTX (40):

FIGS. 46, 47, 48, and 49 schematically illustrate the merging of the finite state transition network of FIG. 43 with the tag transcription network of FIG. 45, according to the illustrated implementation of the present invention; and

5,594,809

Jan. 14, 1997

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 of Image Processing 17

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(see page)

C. B. B.

State Chang & Tan-Cl  
 Patent 1993, Chapter 2, 1  
 7-18  
 International to Patent  
 Application, Jan. 1995, at p.

Fig. 46

Fig. 47

## Detailed Description Text - DETX (15):

Once the residual image 26 has been calculated, it should be associated in some fashion with the storage space digital image 24. This can involve storing the residual image 26 in a memory buffer that is associated with a second memory buffer used to store the storage space digital image 24. Alternatively, many applications will store the image data in a digital file 28 on some sort of digital storage media such as a magnetic disk, an optical disk, or a PCMCIA card using a digital file storage step 27. In this case, the storage space digital image 24 and the residual image 26 can be stored in two different files, or can be stored in the same digital image file. In many cases, the file format used to store the storage space digital image 24 may support the use of private image tags. For example, the file formats TIFF, EXIF and FlashPIX all support tags of this sort. These tags are sometimes referred to as meta-data. In cases where file formats of this type are used, it will be convenient to store the residual image data in the form of a residual image tag. In this way, applications that do not know how to make use of the residual image tag will simply ignore it, and will therefore have access only to the storage space digital image 24. Whereas applications that know how to



United States Patent  
McCarthy et al.

US Patent No. US 6,382,311 B1  
(a) Date of Patent: Aug. 28, 2001

(54) USING A RESIDUAL IMAGE TO  
REPRESENT AN EXTENDED COLOR  
GAMUT DIGITAL IMAGE

1,963,531 11/19/97 Reed et al.  
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09/02/97 02/09/97  
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01/02/00 01/02/00

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(31) Appl. No.: 09/061,028

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(33) Int. Cl. G06K 1/00

(34) U.S. Cl. 382/243, 382/244

(35) Field of Invention: 382/243, 382/244, 382/245, 382/246, 382/247, 382/248, 382/249, 382/250, 382/251, 382/252, 382/253, 382/254, 382/255, 382/256, 382/257, 382/258, 382/259, 382/260, 382/261, 382/262, 382/263, 382/264, 382/265, 382/266, 382/267, 382/268, 382/269, 382/270, 382/271, 382/272, 382/273, 382/274, 382/275, 382/276, 382/277, 382/278, 382/279, 382/280, 382/281, 382/282, 382/283, 382/284, 382/285, 382/286, 382/287, 382/288, 382/289, 382/290, 382/291, 382/292, 382/293, 382/294, 382/295, 382/296, 382/297, 382/298, 382/299, 382/300, 382/301, 382/302, 382/303, 382/304, 382/305, 382/306, 382/307, 382/308, 382/309, 382/310, 382/311, 382/312, 382/313, 382/314, 382/315, 382/316, 382/317, 382/318, 382/319, 382/320, 382/321, 382/322, 382/323, 382/324, 382/325, 382/326, 382/327, 382/328, 382/329, 382/330, 382/331, 382/332, 382/333, 382/334, 382/335, 382/336, 382/337, 382/338, 382/339, 382/340, 382/341, 382/342, 382/343, 382/344, 382/345, 382/346, 382/347, 382/348, 382/349, 382/350, 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whereas applications that know how to use the residual image tag will be able to make use of it to reconstruct the extended color gamut digital image. Some file formats place a limit on the size of tags, so compression of the residual image is important for these applications.

#### Detailed Description Text - DETX (19):

FIG. 4 shows an example of reconstructing an extended color gamut digital image from the limited color gamut digital image and the residual image. The input to this process is an extended color gamut digital file 40 containing a limited color gamut digital image and a residual image created as described above. An extract data from digital file step 41 is used to extract the limited color gamut digital image 42 and the residual image 43. A reconstruct extended color gamut digital image step 44 is then used to form a reconstructed extended color gamut digital image 45 by combining the limited color gamut digital image 42 and the residual image 43. Typically the reconstruct extended color gamut digital image step 44 will involve combining the limited color gamut digital image 42 and the residual image 43.



(21) United States Patent  
McCarthy et al.

(22) Patent No.: US 6,282,311 B1  
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(52) USING A RESIDUAL IMAGE TO  
REPRESENT AN EXTENDED COLOR  
GAMUT DIGITAL IMAGE

1,645,531 1,615,501 Smith et al.

1,645,530 1,600,100 Smith et al.

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(31) Appl. No.: 09/037,779

(32) Filed: Sep. 28, 1999

(51) Int. Cl. G06K 1/00

(52) U.S. Cl. 382/265, 382/266

(53) Field of Search: 382/265, 382/266, 382/267,  
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EDUCATION  
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Number: 5,706,307  
 Date: Jan. 6, 1992

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James J. Mori  
Daryl Lewis  
Joe-Walter Lewis, William A. Lewis &  
1988, Inc.

## ABSTRACT

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Vol. 20 Chapter 20





### Detailed Description Text - DETX (84):

In a variation of the digital signature application just described, an iconic image may be used to carry identifying information about one or more attributes of the text document image--referred to as "meta-data"--that is not derived from or dependent on the content of the image and is thus not a digital signature per se. This information may be encrypted using the private key of the sender or document originator--who presumably is the only source of the private key. This encrypted information may then be encoded in the iconic image. In addition, the iconic image may be produced using a very faithful reproduction and encoding technique such that the iconic image clearly and distinctly shows the appearance of the document image it represents. The iconic image in this embodiment serves as what might be called a "weak" authentication of the original text image: if the iconic image visually appears substantially similar to the original document and the decoded data from the iconic image is successfully able to be decrypted using the public key, it can be reliably determined that the sending authority in possession of the private key sent the document image carrying the iconic image, even if the content of the image cannot be authenticated. Verification of the sending authority alone will be sufficient in some applications to authenticate the document, and thus the operation of producing the photo-signature may be eliminated.



Number: 5,765,176  
 Patent: Jun. 9, 1998

U.S. Patent Office  
 Patent Office  
 Patent Office

FOR PUBLICATION  
 John M. Smith and Associates, Inc.  
 Document Imaging, 1000 Pennsylvania  
 Avenue, N.W., 11th Floor, N.W., Wash., D.C.

Abstract of the invention:

John B. Smith

Graphic Arts

ABSTRACT

Method for an iconic or image, and image is encoded and used in a image management application to identify the document image. The iconic image may be placed in a visible or hidden region of the image. The iconic image is encoded with a variable data in accordance with the original. The iconic image may be a graphical one location as a document image. An encoding operation is applied to the form of the image, and the iconic image is then placed in the image. The iconic image is a portion of the image of the original image. Several embodiments are shown. The iconic image is a document image that may be used to identify the document image. The iconic image is a document image that may be used to identify the document image. The iconic image is a document image that may be used to identify the document image.

See 3D Drawing Sheet



**TITLE:** Method and apparatus for generating a user interface  
from the entity/attribute/relationship model of a  
database

----- KWIC -----

#### Detailed Description Text - DETX (35):

Meta data file 214 includes code implementing the data model of the invention, using the meta data model described hereafter in connection with FIGS. 11-16. Record edit interface 220, while preparing to display at terminal 219 an entity selected from user custom table 217 or applications entity list 216 by start from selection list 210, reads meta data model 216 to determine which relationships exist for that entity, and the attributes for that entity, as will be described hereafter in connection with FIGS. 11-16. Once read from meta data model 216, record edit interface 220 populates display 219 with the information required for a particular entity, such as employee panel 122 (FIG. 1) from data provided by an entry in table 102 (FIG. 1) or employee table 374 (FIG. 7).

Number 6,035,300  
Patent Mar. 7, 2000

217 Database of the invention 20044  
218 Database of the invention 20044  
219 Terminal of the invention 20044  
220 Record edit interface 20044

#### OTHER DOCUMENTS

217 Database of the invention 20044

218 Database of the invention 20044

219 Terminal of the invention 20044

220 Record edit interface 20044

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